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LOUIS PAUL HERZBERG 3 CLOVERDALE LANE MONSEY, NY 10952			EXAMINER KRISHNAN, VIVEK V	
			ART UNIT 4121	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/776,297

Applicant(s)

EILAM ET AL.

Examiner

Vivek Krishnan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☒ Claim(s) 2,3,5-9,12,17,18,20,23 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

### DETAILED ACTION

This is a Non-Final Office Action Correspondence in response to U.S. Application No.

10/776297 filed on February 11, 2004. Claims 1-25 are pending.

#### *Claim Objections*

1. Claims 5, 9, 17, and 23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 17 discloses that the method of claim 1 *can be used* and hence fails to further limit claim 1.

Claims 5, 9, and 23 disclose products to effect the steps or functions of the claims they depend on and hence fail to further limit the claims they depend on.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

2. Claims 6, 7, 8, 12, 17, 18, 20, and 25 are objected to because of the following informalities:

Claims 6, 12, 17, 18, 20, and 25 should be corrected so that semicolons are used in place of commas where appropriate.

Claims 7 and 8 should include an AND or an OR after the last semicolon.  
Appropriate correction is required.

3. Claims 17 and 21 are objected to because of the following informalities:

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Claim 17 contains "at least one of" terminology that indicates an OR relationship between limitations. However applicant uses AND terminology. For example, in claim 17, *infrastructure characteristics change, and* should be corrected to read *infrastructure characteristics change, or*.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. Claims 2, 3, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 2 recites the limitation "*wherein the step of obtaining "a" Service Environment Model*". However, since claim 2 refers to the Service Environment Model as disclosed in claim 1, claim 2 should appropriately read *wherein the step of obtaining "the" Service Environment Model* or should otherwise be modified to include indication that the Service Environment Model as disclosed in claim 2 is the same Service Environment Model disclosed in claim 1. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 3 recites the limitation "*said Service Environment Model description*". However, no Service Environment Model description is introduced in claim 3 or described in any previous claim that claim 3 depends on. There is insufficient antecedent basis for this limitation in the claim.

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7. Claim 21 recites the limitation "**said step of generating**". However, no step of generating is introduced in claim 21. Furthermore, claim 21 is an apparatus claim; it is unclear how an apparatus claim contains steps. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-6, 9-14, 19, and 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,050,807 filed on June 12, 2000 by Osborn (denoted herein as "Osborn").

10. As for claims 1 and 21, Osborn discloses ***a method comprising (an apparatus comprising means for) generating a Concrete Model, said Concrete Model describing a structure of resources implementable over a computing utility infrastructure, and satisfying a set of service requirements, said step of generating comprising the steps of: (means for) obtaining a Service Environment Model of a service environment, said Service Environment Model describing a set of requirements on a new desired state of said service environment*** (Osborn discloses obtaining an object specification, or application specification,

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with virtual application objects of an application which describe requirements associated with the application, see column 3 lines 44-59, column 4 lines 15-23, and Figure 2 reference number 68);

***(means for) getting an Infrastructure Model describing both resources and an organization of the resources in the computing utility infrastructure, said Infrastructure Model is***

***encapsulated in a knowledge subsystem*** (Osborn discloses obtaining a hardware abstract

resource description, or hardware specification, in a system describing both resources and an organization of the resources, see column 3 lines 17-44 and Figure 8); ***and***

***(means for) forming the Concrete Model describing a resource structure such that said***

***Concrete Model refines the Service Environment Model and is mappable to said knowledge***

***subsystem*** (Osborn discloses generating an application abstract resource description describing a

resource structure, see Figure 9, that is derived from the object specification mentioned above

and is mapped to resources in the system, see column 3 lines 60-67 and column 4 lines 1-14).

11. As for claim 2, Osborn discloses each and every limitation of claim 1. Osborn further

discloses ***wherein the step of obtaining a Service Environment Model of the service***

***environment includes receiving a description of a set of requirements on a new desired state of***

***said service environment*** (Osborn discloses the object specification, or application specification,

includes virtual application objects that describe requirements on a new desired state of the

service environment of the application, see column 3 lines 44-59, column 4 lines 15-23, and

Figure 2 reference number 68).

12. As for claim 3, Osborn discloses each and every limitation of claim 1. Osborn further

discloses ***wherein said Service Environment Model description is independent of the***

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***computing utility infrastructure*** (Osborn discloses the object specification, or application specification, that does not depend on to the computing utility infrastructure, see column 3 lines 44-59, column 4 lines 15-23, and Figure 2 reference number 68).

13. As for claim 4, Osborn discloses each and every limitation of claim 1. Osborn further discloses ***wherein said service environment is an entity taken from a group of entities consisting of:***

***a Web site,***

***an on-line gaming service,***

***a scientific computation service,***

***an e-business service,***

***a computing service*** (Osborn discloses a service environment for an application, see column 3 lines 60-67 and column 4 lines 1-14),

***and any combination of these.***

14. As for claim 5, Osborn discloses each and every limitation of claim 1. ***An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein for causing generation of a Concrete Model, the computer readable program code means in said article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1*** (Osborn discloses the system of Figures 1 and 2 to effect the steps of claim 1, see Figures 1 and 2).

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15. As for claim 6, Osborn discloses each and every limitation of claim 1. Osborn further discloses *wherein the step of getting an Infrastructure Model includes an action taken from a group of actions consisting of:*

*querying at least one knowledge subsystem entity* (Osborn discloses obtaining the hardware abstract resource description by obtaining information from a hardware resource manager, see column 3 lines 28-43);

*querying Resource Managers* (Osborn discloses obtaining the hardware abstract resource description by obtaining information from a hardware resource manager, see column 3 lines 28-43),

*querying Resource Instance Services,*

*querying a best practices catalog;*

*obtaining knowledge of available resource types* (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group types, see column 5 lines 52-56 and Figure 8);

*obtaining knowledge of resources constraints* (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group designations and other constraints inherently associated with resource attributes, see column 6 lines 3-20 and Figure 8);

*obtaining knowledge of resource capabilities* (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource attributes, see column 6 lines 45-65 and Figure 8);



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***obtaining knowledge of infrastructure constraints*** (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group designations and other constraints inherently associated with resource attributes, see column 6 lines 3-20 and Figure 8);

***obtaining knowledge of infrastructure capabilities*** (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource attributes, see column 6 lines 45-65 and Figure 8);

***obtaining knowledge of infrastructure best practices patterns;***  
***and any combination of these actions.***

16. As for claim 9, Osborn discloses each and every limitation of claim 1. Osborn further discloses ***a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for generating a Concrete Model, said method steps comprising the steps of claim 1*** (Osborn discloses the system of Figures 1 and 2 that comprise the steps of claim 1, see Figures 1 and 2).

17. As for claim 10, Osborn discloses each and every limitation of claim 1. Osborn further discloses ***further comprising using said generating said Concrete Model to enforce a policy based service provider's best practices in implementation of Service Environments in the computing utility infrastructure*** (Osborn discloses generating the Concrete Model to enforce the requirements needed to run the application, see column 3 lines 1-8 and column 4 lines 15-23).

18. As for claim 11, Osborn discloses each and every limitation of claim 10. Osborn further discloses ***wherein the best practices are encoded as patterns in a best practices catalog and***

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*used in the step of forming said Concrete Model* (Osborn discloses the requirements are derived from an application object library column 3 lines 9-12).

19. As for claims 12 and 22, Osborn discloses each and every limitation of claims 1 and 21. Osborn further discloses *(means for) employing said Concrete Model to generate provisioning actions, said provisioning actions, when executed, create a resource structure that matches the description in the Concrete Model, said resource structure satisfies said set of requirements on new desired state of said service environment* (Osborn discloses obtaining an abstract resource description describing virtual hardware resource objects and using the abstract resource description to create a matching resource structure to satisfy the requirements of the service environment, see column 3 lines 60-67).

20. As for claim 13, Osborn discloses each and every limitation of claim 12. Osborn further discloses *employing said provisioning to enforce a policy based service provider's best practices in implementation of service environments in the computing utility infrastructure* (Osborn discloses employing provisioning to enforce the requirements needed to run the application, see column 3 lines 1-8, 60-67 and column 4 lines 15-23).

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21. As for claim 14, Osborn discloses each and every limitation of claim 13. Osborn further discloses *wherein the best practices are encoded as patterns in a best practices catalog and used in the step of forming the Concrete Model* (Osborn discloses the requirements are derived from an application object library column 3 lines 9-12).

22. As for claims 19 and 24, Osborn discloses each and every limitation of claims 1 and 21. Osborn further discloses *(means for) employing said Concrete Model to generate a Resource Manager for a composite resource* (Osborn discloses that a hardware resource manager employs the application hardware resource specification and a hardware resource diagram, which represents a composite resource, see column 6 lines 3-20 and Figure 8, to allocate the composite resource and thereby create a resource manager for the composite resource, see column 7 lines 1-25).

23. As for claim 23, Osborn discloses each and every limitation of claim 21. Osborn further discloses *a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing generation a Concrete Model, the computer readable program code means in said computer program product comprising readable program code means for causing a computer to effect the functions of claim 21* (Osborn discloses the system of Figures 1 and 2 to effect the functions of claim 21, see Figures 1 and 2).

24. As for claim 25, Osborn discloses each and every limitation of claim 1. Osborn further discloses *where the step of generating a Concrete Model is performed by a user taken from a group of user's consisting of:*

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*a service provider,*

*a customer of a service provider,*

*a company owning an IT infrastructure* (Osborn discloses an application developer, see column 3 lines 1-15 and column 8 lines 12-23), *and*

*a utility provider* (Osborn discloses an application developer, see column 3 lines 1-15 and column 8 lines 12-23).

### ***Claim Rejections - 35 USC § 103***

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 1 above, and in further view of U.S. Patent Application Publication No. US 2003/0208473 A1 filed on January 28, 2000 by Lennon (denoted herein as "Lennon").

27. As for claim 7, Osborn discloses each and every limitation of claim 1. Osborn does not explicitly disclose, but Lennon discloses *wherein the step of forming a Concrete Model includes: at least one refinement step comprised of selecting a node and replacing said node with a sub graph structure to obtain an intermediary model which is an input to a next refinement step* (Lennon discloses selecting the description object in a resource description, see

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DDF on page 9 paragraphs 115 and 116, and replacing it with a sub tree structure, see Figure 5, to produce a description object model, see page 11 paragraphs 154-156 and Figures 2A and 2B); ***repeating the step of selecting and replacing until a resulting intermediary model is mappable to said knowledge subsystem*** (Lennon discloses the description object model, or DesOM, represents resources and resource relationships mappable to the system, see page 11 paragraphs 154-156 and Figures 2A and 2B).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of forming a Concrete Model and of a description of resources (Service Environment Model) to include refining the description of resources to produce a Concrete Model in order to provide a consistent method of describing resources and thereby utilizing resource descriptions, see page 1 paragraph 6 of Lennon.

28. As for claim 8, Osborn and Lennon in combination disclose each and every limitation of claim 7. Lennon further discloses ***wherein said step of replacing comprises a limitation taken from a group of limitations consisting of:***

***querying a best practices catalog;***

***generating sub graph patterns dynamically;***

***employing graph matching techniques to obtain said sub-graph structure*** (Lennon discloses matching the sub tree structure to the description object, see page 11 paragraph 155 and Figure 5);

***employing graph merging techniques to obtain said sub-graph structure*** (Lennon discloses merging the sub tree structure to the description object, see page 11 paragraph 155 and Figure 5); ***any combination of these limitations.***

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of forming a Concrete Model and of a description of resources (Service Environment Model) to include refining the description of resources to produce a Concrete Model in order to provide a consistent method of describing resources and thereby utilizing resource descriptions, see page 1 paragraph 6 of Lennon.

29. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 12 above, and in further view of U.S. Patent No. 6,332,023 B1 issued on December 18, 2001 to Porter et al. (denoted herein as "Porter").

30. As for claim 15, Osborn discloses each and every limitation of claim 12. In addition, Osborn and Porter in combination disclose *wherein step of provisioning includes a task taken from a group of tasks consisting of:*

*creating a new service environment* (Osborn discloses allocating resources to an application to create a service environment, see column 3 lines 60-67),

*changing the combination of resources allocated to a service environment* (Osborn discloses allocating resources to an application to create a service environment, see column 3 lines 60-67. In addition, Porter discloses de-allocating resources allocated to a service environment, see column 3 lines 40-50),

*changing the configuration of resources allocated to a service environment* (Porter discloses changing the configuring of a resource that has been allocated to a service environment, see column 3 lines 30-40), *or*

*destroying a service environment , or*

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***any combination of the above.***

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning to include the ability to change the configuration of resources in order to provide for a more flexible allocation of resources, see column 2 lines 35-54 of Porter.

31. As for claim 16, Osborn and Porter in combination disclose each and every limitation of claim 15. Porter further discloses ***wherein changing the configuration of resources allocated to a service environment include:***

***changing the local state of a resource*** (Porter discloses updating static and dynamic resource attributes, see column 1 lines 66-67, column 3 lines 1-20), ***or***

***changing the way the resource is configured to work with other resources.***

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning to include the ability to change the configuration of resources in order to provide for a more flexible allocation of resources, see column 2 lines 35-54 of Porter.

32. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 1 above, and in further view of U.S. Patent Application Publication No. US 2004/0128397 A1 filed on September 10, 2003 by Glasmann et al. (denoted herein as "Glasmann").

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33. As for claim 17, Osborn discloses each and every limitation of claim 1. Osborn does not explicitly disclose, but Glasmann discloses *regenerate provisioning instructions whenever at least one of the following occurs:*

*infrastructure characteristics change* (Glasmann discloses allocating resources when there is a change in the topology, see page 1 paragraph 5, 8, and 9), *and*  
*requirements of a service change.*

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning resources to include providing resources when infrastructure characteristics change in order to provide for adaptive resource checking and reacting to topology changes (see page 1 paragraphs 7 and 10 of Glasmann).

34. As for claim 18, Osborn and Glasmann in combination disclose each and every limitation of claim 17. Glasmann further discloses *wherein the infrastructure characteristics include a characteristic taken from a group of characteristics consisting of:*

*types of resources in the infrastructure,*

*capabilities of said resources* (Glasmann discloses topology changes include changes in the capabilities of a resource, see page 1 paragraphs 4 and 5),

*configuration of said resources* (Glasmann discloses topology changes include changes in the configuration of a resource, see page 1 paragraphs 4 and 5),

*constraints on configuration of said resources,*

*best practices patterns as defined in the best practices catalog,*

*and any combination of the above.*



It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning resources to include providing resources when infrastructure characteristics change in order to provide for adaptive resource checking and reacting to topology changes (see page 1 paragraphs 7 and 10 of Glasmann).

35. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 19 above, and in further view of U.S. Patent No. 6,901,446 B2 filed on February 28, 2001 by Chellis et al. (denoted herein as "Chellis").

36. As for claim 20, Osborn discloses each and every limitation of claim 19. Osborn does not explicitly disclose, but Chellis discloses *wherein said Resource Manager provides a set of resource manager methods taken from a group of resource manager methods consisting of: creating composite resources based on a Concrete Model* (As mentioned above, Osborn does disclose a resource manager for a composite resource. However, Osborn does not explicitly disclose, but Chellis discloses a resource manager capable of creating a composite resource, or set of interdependent resources, based on defined resource requirements for a service, see column 3 lines 36-59),

*changing composite resources based on a Concrete Model* (As mentioned above, Osborn does disclose a resource manager for a composite resource. However, Osborn does not explicitly disclose, but Chellis discloses a resource manager capable of changing a composite resource, or set of interdependent resources, based on defined resource requirements for a service, see column 3 lines 36-67 column 4 lines 1-27 and column 9 lines 55-67),

*destroying composite resources based on a Concrete Model, and*

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*any combination of these methods.*

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Osborn's disclosure of a resource manager the ability to create and change composite resources in order to provide increased functionality to the resource manager and, in addition, to provide for more robust allocation of composite resources (see column 2 lines 44-67 and column 3 lines 1-6).

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***Conclusion***

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,786,901 B1 issued to Osborn et al.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Krishnan whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VK

  
TAGHI ARANI  
PRIMARY EXAMINER  
10/9/04